

Following is a partial list of key changes from beta version of AERSCREEN to version 11060. For more details of changes see the model change bulletin.

1. Corrected a bug in the receptor placement routine for rectangular area sources that miscalculated maximum concentrations for rectangular area sources.
2. Probe distance is now entered in meters instead of kilometers.
3. If the user enters a probe distance that is not a multiple of 25 m, the probe distance is reset to the next multiple of 25 m higher than the probe distance. This is to aid in receptor spacing calculations.
4. Receptor spacing methodology has changed. From zero to 5 km, spacing is 25 m. From 5 km to the final probe distance, spacing is based on the difference between the probe distance and 5 km divided by 100 receptors.
5. AERSCREEN now includes the DOMAINXY keyword in the AERMAP input file when processing terrain. For FLOWSECTOR processing, the domain is set to 1.1 times the probe distance and for REFINE processing the domain is set to 1.1 times the maximum distance in the REFINE AERMOD model run. Adding the DOMAINXY keyword speeds up AERMAP processing when processing large files.
6. The user can specify an output file name, other than the default AERSCREEN.OUT but it must have an .OUT extension. If a non-default name is used, AERSCREEN also renames the max_conc_distance.txt file using the prefix of the output filename. Also, AERSCREEN copies the new AERSCREEN.INP and AERSCREEN.LOG files to files with the same prefix as the output filename, retaining the .inp and .log extensions respectively.
7. AERSCREEN can process NO_x to NO₂ conversion using the PVMRM or OLM options in AERMOD. The user specifies which option to use, the NO₂/NO_x in-stack ratio, and a representative ozone concentration.
8. The user can specify up to ten discrete receptor distances to include in the receptor network. Receptor distances less than the minimum ambient distance or more than the probe distance are not included in the network. Also, discrete distances that are duplicative of the automatic receptor network distances are not included. Units of receptors are meters, kilometers, feet, or miles, and the units are independent of the units of other parameters (English or metric).
9. If the AERMOD and/or MAKEMET executables are not in the current working folder, AERSCREEN will prompt the user for their location and copy the executables to the current working folder. The same is done for the BPIPPRM executable if processing downwash and also for AERMAP if processing terrain. In the beta version of AERSCREEN, if an executable was missing, AERSCREEN notified the user and stopped processing.
10. More quality assurance checks on inputs, including the presence and order of data lines in the AERSCREEN.INP file. If the emissions data comes after downwash, terrain, or the miscellaneous data section, AERSCREEN notifies the user and stops processing. If one of the data sections is missing AERSCREEN will notify the user and stop processing.
11. If using an already existing BPIPPRM input file, AERSCREEN checks that the process flag is set to "P" or "p" for PRIME downwash or that only one stack is listed in the file.